

AMENDMENT

Please amend the application as indicated hereafter.

To the Claim:

Claim 1. (currently amended) A serial-protocol panel display system, suitable for use in a panel display apparatus, comprising:

a pixel-array unit;

~~a plurality of gate drivers and source drivers, used for driving the pixel-array unit to display image; and~~

a video graphic adapter (VGA) unit, according to a serial protocol, to export a serial-protocol image display signal and a clock pair signal ~~to a corresponding one of the gate drivers and one of the source drivers, wherein the image display signal includes a red pair signal , a green pair signal and a blue pair signal; and~~

a plurality of gate drivers and source drivers, coupled to the video graphic adaptor unit and the pixel-array unit, the gate and the source drivers receiving the clock pair signal, the red pair signal, the green pair signal and the blue pair signal, the gate and the source drivers decode the clock pair signal and at least one of the red or the green or the blue pair signals to obtain a plurality of input signals for driving the pixel-array unit to display image.

~~wherein the gate and source drivers respectively decode the serial-protocol image display signal, so as to obtain a plurality of input signals, and to drive pixels of the pixel-array unit and the serial-protocol image display signal is at least one of red or green or blue pair signals.~~

Claim 2 (original) The serial-protocol panel display system of claim 1, further comprising a connector, coupled between the VGA unit and the gate and source drivers.

Claim 3 (original) The serial-protocol panel display system of claim 1, further comprising a gamma correction unit, to provide a color management information to the source drivers.

Claim 4 (original) The serial-protocol panel display system of claim 1, further comprising a power source unit, to provide a plurality of voltage levels for use in the panel display system.

Claim 5 (canceled)

Claim 6 (currently amended) The serial-protocol panel display system of claim 1, each of the source drivers includes:

a source input interface, receiving the serial-protocol image display signal and the clock pair signal exported from the VGA unit ~~and the clock signal~~, wherein the serial-protocol image display signal and the clock signal are continuously transmitted to a next one of the source drivers, and are used for decoding out a plurality of control signals for the source drivers and a color information ~~a plurality of source input signals~~ in the input signals; and

a state-in-the-art source driver, respectively receiving the control signals for the source drivers and the color information ~~the source input signals~~.

Claim 7 (currently amended) The serial-protocol panel display system of claim 6, wherein the source input interface comprises:

a decoding unit, according to the serial-protocol image display signal and the clock

signal, decoding into the control signals and the color information~~source input signals~~ and exporting to the state-in-the-art source driver, wherein, the control signals for the source drivers include a clock signal and an identification information; and

a switch unit, passing the serial-protocol image display signal and the clock pair signal to the next one of the source drivers according to the clock signal and the identification information, and coupled with the decoding unit for exporting a decoded color information and the clock signal to the state-in-the-art source driver according to the clock signal and the identification information.

Claim 8 (currently amended) The serial-protocol panel display system of claim 6, wherein the color information ~~serial-protocol image display signal~~ includes color signals of red, green, and blue.

Claim 9 (currently amended) The serial-protocol panel display system of claim 1, wherein each of the gate drivers includes:

a gate input interface, receiving at least a portion of the serial-protocol image display signal and the clock pair signal exported from the VGA unit ~~and the clock signal~~, wherein the serial-protocol image display signal and the clock signal are continuously transmitted to a next one of the gate drivers, and are used for decoding out a plurality of control signals for the gate drivers ~~a plurality of gate input signals~~ in the input signals; and

a state-in-the-art gate driver, respectively receiving the control signals for the gate drivers ~~gate input signals~~.

Claim 10 (canceled)

Claim 11 (currently amended) The serial-protocol panel display system of claim

[[10]] 9, wherein the gate input interface includes:

a decoding unit, according to the serial-protocol image display signal and the clock signal, decoding into the control signals for the gate drivers ~~gate input signals~~ and exporting to the state-in-the-art gate driver, wherein, the control signals for the gate drivers include a clock signal and an identification information; and

a switch unit, passing the serial-protocol image display signal and the clock signal to the next one of the gate drivers according to the clock signal and the identification information, and coupled with the decoding unit for exporting a clock signal to the state-in-the-art gate driver according to the clock signal and the identification information.

Claim 12 (canceled)

Claim 13 (canceled)

Claim 14 (canceled)

Claim 15 (currently amended) A gate driver, suitable for use in a panel display apparatus to drive corresponding pixels, comprising:

a gate input interface, receiving a serial-protocol image display signal and a clock pair signal, wherein the serial-protocol image display signal and the clock pair signal are continuously transmitted to a next one of the gate driver and the image display signal includes a red pair signal, a green pair signal and a blue pair signal, the red pair signal, the green pair signal, the blue pair signal and the clock pair signal are used for decoding out a plurality of control signals for gate drivers ~~gate input signals~~; and

a state-in-the-art gate driver, respectively receiving the control signals for gate

drivers ~~gate input signals~~,

wherein the serial-protocol image display signal is at least one of red or green or blue pair signals.

Claim 16. (currently amended) The gate driver of claim 15, wherein the gate input interface includes:

a decoding unit, according to the serial-protocol image display signal and the clock pair signal, decoding into the control signals for the source drivers ~~gate input signals~~ and exporting to the state-in-the-art gate driver, wherein the control signals for the source driver include a clock signal and a identification information; and

a switch unit, passing the serial-protocol image display signal and the clock pair signal to the next one of the gate driver according to the clock signal and the identification information, and coupled with the decoding unit for exporting the clock signal to the state-in-the-art gate driver according to the clock signal and the identification information.

Claim 17 (canceled)

Claim 18 (currently amended) A serial-protocol panel display method, comprising:

receiving an image control signal and a clock pair signal;

encoding the image control signal into a serial-protocol image display signal, according to a serial protocol;

sequentially transmitting the serial-protocol image display signal and the clock pair signal to a plurality of source drivers, wherein the serial-protocol image display signal includes a red pair signal, a green pair signal and a blue pair signal;



sequentially transmitting at least a portion of the serial-protocol image display signal and the clock pair signal to a plurality of gate drivers;

decoding the serial-protocol image display signal and the clock pair signal into a first set of control signals and a color information in each of the source drivers, used for pixel display, wherein the first set control signals include a first clock signal and a first identification information;

decoding the serial-protocol image display signal into a second set of control signals in each of the gate drivers, wherein the second set control signals include a second clock signal and a second identification information; and

driving the corresponding pixels, according to the first set of control signals, the second set of control signal, and the color information;

~~wherein the serial-protocol image display signal is at least one of red or green or blue pair signals.~~

Claim 19. (currently amended) A serial-protocol panel display system, suitable for use in a panel display apparatus, comprising:

a pixel-array unit;

a plurality of drivers, used for driving the pixel-array unit to display image; and

a video graphic adapter (VGA) unit, according to a serial protocol, to export a serial-protocol signal and a clock pair signal to a corresponding one of the drivers,

wherein the drivers decode the serial-protocol signal and the clock pair signal, so as to obtain a plurality of image signals and control signals, and to drive pixels of the pixel-array unit, and the serial-protocol image display signal is a red pair signal, a green

pair signal and a blue pair signal ~~at least one of red or green or blue pair signals.~~

Claim 20 (original) The serial-protocol panel display system of claim 19, further comprising a connector, coupled between the VGA unit and the drivers.

Claim 21 (original) The serial-protocol panel display system of claim 19, further comprising a gamma correction unit, to provide a color management information to the driver.

Claim 22 (original) The serial-protocol panel display system of claim 19, further comprising a power source unit, to provide a plurality of voltage levels for use in the panel display system.

Claim 23 (original) The serial-protocol panel display system of claim 19, wherein the drivers include source drivers and gate drivers.

Claim 24 (currently amended) The serial-protocol panel display system of claim 23, each of the source driver includes:

a source input interface, receiving the serial-protocol image display signal and the clock pair signal exported from the VGA unit ~~and the clock signal~~, wherein the serial-protocol image display signal and the clock signal are continuously transmitted to a next one of the source drivers, and are used for decoding out a plurality of control signals for the source drivers and a plurality of color information ~~source input signals~~ in the input signals; and

a state-in-the-art source driver, respectively receiving the control signals for the source drivers and a plurality of color information, wherein the control signals for the source drivers includes a clock signal and an identification information ~~source input~~

signals.

Claim 25 (currently amended) The serial-protocol panel display system of claim 24, wherein the source input interface comprises:

a decoding unit, according to the serial-protocol image display signal and the clock pair signal, decoding into the control signals for the source drivers and the color information-source input signals and exporting to the state-in-the-art source driver; and

a switch unit, passing the serial-protocol image display signal and the clock pair signal to the next one of the source drivers according to the clock signal and the identification information, and coupled with the decoding unit for exporting a decoded color information and the clock pair signal to the state-in-the-art source driver according to the clock signal and the identification information.

Claim 26 (currently amended) The serial-protocol panel display system of claim 24, wherein the color information ~~serial-protocol image display signal~~ includes color signals of red, green, and blue.

Claim 27. (currently amended) The serial-protocol panel display system of claim 23, each of the gate drivers includes:

a gate input interface, receiving at least a portion of the serial-protocol image display signal and the clock pair signal exported from the VGA unit ~~and the clock signal~~, wherein the serial-protocol image display signal and the clock pair signal are continuously transmitted to a next one of the gate drivers, and are used for decoding out a plurality of control signals for the gate drivers ~~gate input signals~~ in the input signals; and

a state-in-the-art gate driver, respectively receiving the control signals for the gate



drivers, wherein the control signals for the gate drivers include a clock signal and an identification information ~~gate input signals~~.

Claim 28. (canceled)

Claim 29. (currently amended) The serial-protocol panel display system of claim [[28]] 27, wherein the gate input interface includes:

a decoding unit, according to the serial-protocol image display signal and the clock pair signal, decoding into the control signals for the gate drivers ~~gate input signals~~ and exporting to the state-in-the-art gate driver, wherein the control signals for the gate drivers include a clock signal and an identification information; and

a switch unit, passing the serial-protocol image display signal and the clock pair signal to the next one of the gate drivers according to the clock signal and the identification information, and coupled with the decoding unit for exporting a clock signal to the state-in-the-art gate driver according to the clock signal and the identification information.

Claim 30 (currently amended) The serial-protocol panel display system of claim 19, wherein the VGA unit includes:

a VGA chip; and

a protocol encoder, coupled with the VGA chip for encoding, and exporting the serial-protocol image display signal and clock pair signal.